

ABSTRACT

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The present invention comprises a full mesh optical backplane with redundant power distribution conductors. The interconnect in a preferred form of backplane provides a set of power distribution conductors and $(n \times (n-1))$ dedicated, optically isolated transmission guides and such that each circuit board assembly within a system can directly transmit optically isolated data to any and all other circuit boards using dedicated, individual transmission means within the system and such that each circuit board assembly is provided with power from a centralized source such as the -48v battery subsystem provided by most central switching offices. A modified full mesh optical backplane in the form of a midplane is disclosed. Circular and rectilinear backplanes, and combinations of circular and rectilinear variations are also disclosed.